

From the INTERNATIONAL BUREAU

PCT**NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)**

(PCT Rule 44bis.1(c))

To:

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Date of mailing (day/month/year) 15 June 2006 (15.06.2006)		
Applicant's or agent's file reference cmc9_041203		IMPORTANT NOTICE
International application No. PCT/KR2004/003169	International filing date (day/month/year) 03 December 2004 (03.12.2004)	
Priority date (day/month/year) 03 December 2003 (03.12.2003)		
Applicant HELIXIR CO., LTD et al		

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Philippe Becamel

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference cmc9_041203	FOR FURTHER ACTION		See item 4 below
International application No. PCT/KR2004/003169	International filing date (<i>day/month/year</i>) 03 December 2004 (03.12.2004)	Priority date (<i>day/month/year</i>) 03 December 2003 (03.12.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant HELIXIR CO., LTD			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input checked="" type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Date of issuance of this report 07 June 2006 (07.06.2006)
	Authorized officer Philippe Becamel Telephone No. +41 22 338 70 90

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 18 MAR 2005

WIPO

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To:

SHIN, Dong In

304, DUKAM Building, 1457-2, Seocho3-dong, Seocho-gu
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) 08 MARCH 2005 (08.03.2005)

Applicant's or agent's file reference

cmc9_041203

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2004/003169

International filing date (day/month/year)

03 DECEMBER 2004 (03.12.2004)

Priority date (day/month/year)

03 DECEMBER 2003 (03.12.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC7 A61K 31/343, A61P 3/04, A23L 1/29

Applicant

PANGENOMICS CO., LTD. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, Mi Jeong

Telephone No. 82-42-481-5601



WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2004/003169

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
 - ☐ paid additional fees under protest
 - ☐ not paid additional fees
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☐ not complied with for the following reasons:

Group I. Claims 1-4 relate to a pharmaceutical composition for preventing obesity comprising dehydrodiconiferyl alcohol of formula (1a).

Group II. Claims 5, 6 relate to health care food for preventing obesity comprising the said active ingredient.

Although both Group I and II are relevant to the composition comprising the same active ingredient, there is no technical relationship between a pharmaceutical composition and health care food.

4. Consequently, this opinion has been established in respect of the following parts of the international application :

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/003169

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1 - 6	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 6	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 6	YES
	Claims		NO

2. Citations and explanations :

The following documents are referred to in this report:

- D1: Tetrahedron Lett. Vol.41, pp.2491-2494 (2000)
 D2: Ann. Nutr. Metab. Vol.28(2), pp.65-69 (1984)
 D3: Biosci. Biotechnol. Biochem. Vol.65(5), pp.1134-1140 (2001)
 D4: JP 62209070 A (14 Sep. 1987)

1. Novelty

Claims 1-4 of the present invention relate to a pharmaceutical composition comprising dehydrodiconiferyl alcohol of formula (1a) to treat and prevent obesity and adipogenesis-involved diseases such as type II diabetes, hyperlipemia, and atherosclerosis.

Claim 5 and claim 6 of the present invention relate to health care food comprising the said active compound to prevent and alleviate obesity and adipogenesis-involved diseases.

D1 discloses that racemic naturally occurring neolignan compounds possessing the 2, 3-dihydrobenzo[b]furan skeleton have a PGI₂ inducing effect and D2 discloses that one of the possible causes for weight reduction is the increase in plasma PGI₂.

D3 discloses a stereoselective synthetic method of (+)-dehydrodiconiferyl alcohol. The derivatives of dehydrodiconiferyl alcohol have been reported to have such biological activities as antioxidative and cytokeratin-like.

D4 discloses that a neolignan compound which has the same backbone structure as dehydrodiconiferyl alcohol exerts anti-cholesterol activity.

None of D1-D4 discloses a dehydrodiconiferyl alcohol can be used for treatment or prevention of obesity and adipogenesis-involved diseases.

Therefore, claims 1-6 of the present invention are considered to be novel over D1-D4 [Article 33(2) PCT].

2. Inventive Step

(Continued on Supplemental Sheet.)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2004/003169

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Box V.

D1 and D4 disclose that a neolignan compound which has the same backbone structure as dehydrodiconiferyl alcohol can be used for treatment of obesity and adipogenesis-involved diseases. However, the substituents of the said neolignan compound are so different from the corresponding substituents of dehydrodiconiferyl alcohol that a man skilled in the art would not be able to expect the changes in the substituent structures. Subsequently, it is not easily expected without experiments by a man skilled in the art that dehydrodiconiferyl alcohol of formula (1a) with the new substituents would be useful for treatment of obesity and adipogenesis-involved diseases.

Therefore, the inventive step of claims 1-6 can be acknowledged over D1-D4 [Article 33(3) PCT].

3. Industrial Applicability

The subject-matter of claims 1-6 appears to be industrially applicable [Article 33(4) PCT].